

<b>FEATURE:</b>  Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low  Life Cycle - 50 Year Summary			<b>PROJECT:</b>  Klamath River Oregon				
			<b>WOID:</b> AF652	<b>ESTIMATE LEVEL</b> Feasibility			
			<b>REGION</b> MP	<b>UNIT PRICE LEVE</b> Jul-10			
			<b>FILE:</b> U:\2011 Projects\Klamath\002 Completed Sheets\MP MPL MPH\03 - JC Boyle\MPL\JC Boyle - MPL - Probable.xlsx\Life Cycle Summary				

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		Periodic Costs - Year 1					\$299,400.00
		Periodic Costs - Year 17					\$100,600.00
		Periodic Costs - Year 25					\$29,667.63
		Periodic Costs - Year 33					\$52,688.00
		Periodic Costs - Year 50					0.00
		(Assumes gov't service / construction contracts)					
		Annual Costs - Maintenance					\$1,114,593.00
		<b>Subtotal 1</b>					<b>\$1,596,948.63</b>
		Mobilization	5%	+/-			\$80,000.00
		<b>Subtotal 1 with Mobilization</b>					<b>\$1,676,948.63</b>
		Escalation to Notice to Proceed (NTP): from Unit Price Level (July, 2010) to NTP (July, 2020)					\$269,218.37
			at	1.5%	per year for	120 months.	
		<b>Subtotal 2 = Subtotal 1 with Mobilization + Escalation to NTP</b>					<b>\$1,946,167.00</b>
		Design Contingencies	8%	+/-			\$153,833.00
		<b>Subtotal 3 = Subtotal 2 + Design Contingencies</b>					<b>\$2,100,000.00</b>
		Allowance for Procurement Strategies (APS)	0%	+/-			
		Type of solicitation assumed is: Full and open sealed bid competition					
		<b>Subtotal 4 = Subtotal 3 + APS</b>					<b>\$2,100,000.00</b>
		<b>CONTRACT COST</b>					<b>\$2,100,000.00</b>
		Construction Contingencies	18%	+/-			\$400,000.00
		<b>FIELD COST</b>					<b>\$2,500,000.00</b>
		Non-Contract Costs	25%	+/-			\$600,000.00
		(Environmental Cultural / Mitigation ~ 5%, Engineering					
		Design ~ 4%, Maintenance Service Contract ~ 4%					
		Procurement ~ 1%, Inspections ~ 10%					
		and Closeout ~ 1%)					
		<b>CONSTRUCTION COST</b>					<b>\$3,100,000.00</b>
		Ref.: For appropriate use and terminology, see Reclamation Manual, Directives and Standards FAC; 09-01, 09-02 and 09-03.					


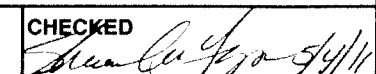
QUANTITIES		PRICES	
<b>BY</b> Rick Benik	<b>CHECKED</b> Stephen Latham	<b>BY</b> <i>Justin</i> Greg Akins	<b>CHECKED</b> <i>Shirley</i> 5/18/11
<b>DATE PREPARED</b> 03/24/11	<b>PEER REVIEW / DATE</b> Tom Hepler P.E. 3/25/11	<b>DATE PREPARED</b> 5/13/11	<b>PEER REVIEW / DATE</b> Dad 6/13/11

<b>FEATURE:</b> Klamath River Dams Removal Partial Removal Option JC Boyle Dam & Powerplant Removal Most Probable Low Life Cycle - 50 Year Operation and Maintenance - Initial Capital Costs		<b>PROJECT:</b> Klamath River Oregon					
		<b>WOID:</b> AF652		<b>ESTIMATE LEVEL:</b> Feasibility			
		<b>REGION:</b> MP		<b>UNIT PRICE LEVEL:</b> Jan-11			
		<b>FILE:</b> U:\2011 Projects\Klamath\002 Completed Sheets\MP MPL MPH\03 - JC Boyle\MPL\JC Boyle - MPL - Probable.xlsx\Life Cycle Summary					

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Remove paint on downstream face of power house (assume paint contains heavy metals)	86-68130	900	ft2	\$30.00	\$27,000.00
	2	Furnish, install, and maintain a 7-foot-high chain line fence around both ends of the 14-foot diameter penstock and the intake structure (assume fence includes two 3-foot-wide access gates) (assume 1 replacement) <i>Estimate assume minor paint repair ~ 2%</i>	86-68130	1,450	lf	\$50.00	\$72,500.00
	3	Repaint 14-foot-diameter penstock pipe between intake structure at dam and headgate structure (assume repaint 2 times) <i>Estimate assume minor paint repair ~ 2%</i>	86-68130	32,000	ft2	\$3.50	\$112,000.00
	4	Repaint rocker bent penstock pipe supports (assume repaint 2 times) <i>Estimate assume minor paint repair ~ 2%</i>	86-68130	3,000	ft2	\$5.00	\$15,000.00
	5	Repaint penstock intake structure trashracks (four separate 11.5-ft-wide by 40-ft-high openings) (assume repaint 2 times) <i>Estimate assume minor paint repair ~ 2%</i>	86-68130	4,200	ft2	\$5.00	\$21,000.00
	6	Repaint outside of fish screen building on top of penstock intake structure (assume repaint 2 times) <i>Estimate assume minor paint repair ~ 2%</i>	86-68130	3,900	ft2	\$5.00	\$19,500.00
	7	Repaint wheel gate in penstock intake structure (assume repaint 2 times) <i>Estimate assume minor paint repair ~ 2%</i>	86-68130	510	ft2	\$10.00	\$5,100.00
	8	Repaint wheel gate hoist frame (assume repaint 2 times) <i>Estimate assume minor paint repair ~ 2%</i>	86-68130	2,000	ft2	\$6.50	\$13,000.00
						<b>LIFE CYCLE SUBTOTAL THIS SHEET</b>	<b>\$285,100.00</b>

QUANTITIES		PRICES	
<b>BY</b> Rick Benik	<b>CHECKED</b> Stephen Latham	<b>BY</b>  Greg Akins	<b>CHECKED</b> 
<b>DATE PREPARED</b> 03/21/11	<b>PEER REVIEW / DATE</b> Tom Hepler P.E. 3/24/11	<b>DATE PREPARED</b> 5/4/11	<b>PEER REVIEW / DATE</b> SCD 5/4/11



**FEATURE:**

Klamath River Dams Removal

Partial Removal Option

Removal Site Maintenance

Most Probable Low

Life Cycle - 50 Year

Operation and Maintenance - Periodic Costs

**PROJECT:**

Klamath River

Oregon

WOID: AF484

ESTIMATE LEVEL: Feasibility

REGION: MP

UNIT PRICE LEVEL Jul-10

**FILE:**

U:\2011 Projects\Klamath\002 Completed Sheets\MP MPL MPH\03 - JC Boyle\MPL\JC Boyle - MPL - Probable.xlsx\Life Cycle Summary

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	1	Site Maintenance - Annual		1	LS	\$53,000.00	\$53,000.00
		Labor needed per year	86-68130	90	mdy*		
		3-Man maintenance crew					
		6 Months active inspection/maintenance					
		2 Weeks full time (1 month each spring)					
		4 Full days, 2 times each month (5 months)					
		Site maintenance required at JC Boyle,					
		Copco 1 & Copco 2					
		Estimate prorated the time at each dam site based					
		on percent of total partial removal construction costs					
		Equipment needed per year	86-68130	30	dy**		
		1-Service truck					
		Includes compressor, welder, generator					
		and general tools					
		Estimate prorated the time at each dam site based					
		on percent of total partial removal construction costs					
		Materials needed per year (percentage of labor	86-68130	15%			
		& equipment)					
		Road maintenance needed per year (percentage	86-68130	10%			
		of labor & equipment)					
		* Man days per year for 50 years					
		**Days per year for 50 years					
		SUBTOTAL THIS SHEET					\$53,000.00

**QUANTITIES****PRICES**

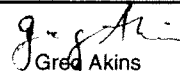
BY

Rick Benik

CHECKED

Stephen Latham

BY

  
 Greg Akins

CHECKED

  
 Rick Benik

DATE PREPARED

04/18/11

PEER REVIEW / DATE

Tom Hepler P.E. 4/18/11

DATE PREPARED

5/4/11

PEER REVIEW / DATE

DCD 5/4/11